



# SONANCE THINLINE™ IN-CEILING SPEAKERS

---

INSTRUCTION MANUAL



## INTRODUCTION

Thank you for purchasing Sonance ThinLine™ TL and SSTR-series speakers. When properly installed your new speakers will give you years of entertainment pleasure. This manual will teach you all about your new speakers' many innovative features and will show you how to get the very best performance from them. Please read it thoroughly.

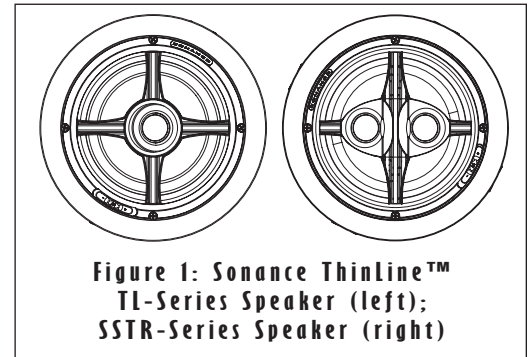
The directions in this manual apply to each model in the series. This manual covers the following speaker models: TL623R, TL622R; TL621R; TL623SSTR.

### SAFETY WARNING:

These speakers have FastMount® tabs that prevent the speaker from falling out of the mounting hole during the installation process.

*The edges of the FastMount tabs are very sharp.  
Use caution when handling the speaker.*

See *Installation* (page 8) for complete information about the FastMount tabs.



## DESIGN AND FEATURES

- **Thin (77mm) depth allows installation in areas too shallow for conventional in-ceiling speakers.**
- **Pivoting tweeters direct the sound at listeners for clear sound and improved stereo imaging even when speaker placement options are limited.**
- **TL623SSTR reproduces both left and right channels from a single speaker — ideal for small spaces like hallways, closets and bathrooms.**
- **A 3-position tweeter adjustment switch lets you balance the speaker's high-frequency energy to better compliment your room's setup and acoustics (TL623R/TL623SSTR).**
- **The RotoLock® mounting system makes installation quick and easy.**
- **The detachable mounting flange expands installation options, allowing the speaker assembly to be easily mounted in custom cabinetry.**

## BOX CONTENTS

Your Sonance ThinLine speaker box should contain the following items:

#### ThinLine TL623R/TL622R/TL621R:

- (2) ThinLine TL623R, TL622R or TL621R speakers
- (2) Paintable grilles
- (2) Plastic paint plugs (installed on fronts of speakers)
- (1) Mounting cutout template (in packaging)

#### ThinLine TL623SSTR:

- (1) ThinLine TL623SSTR speaker
- (1) Paintable grille
- (1) Plastic paint plug (installed on fronts of speakers)
- (1) Mounting cutout template (in packaging)

## OPTIONAL ACCESSORIES

**Symphony FlexBracket (part #92337):** Plastic template to reserve a mounting hole for ThinLine speakers in new construction. Designed to be used with the RotoLock® mounting system.

**Symphony TR Coverplate (part #92335):** Reusable cover protects the hole made by the FlexBracket during construction until the speaker is installed.

**Sonafill® In-Ceiling System (part #91928):** Retrofittable acoustical treatment consisting of two pillows and four tiles that virtually eliminates noises produced by resonating drywall. Dramatically improves midbass sound quality and reduces sound transmission into adjacent rooms.

## SPEAKER PLACEMENT

### TL623SSTR

ThinLine Single Stereo Technology® SSTR speakers are ideal for use in hallways, bathrooms, closets, or in any location where listeners will be moving around and a pair of stereo speakers would be impractical. The location of the speaker should be determined by considering the primary listening location as well as aesthetic values. Because a single ThinLine SSTR speaker reproduces both stereo channels from a single location, it will deliver outstanding performance from an extremely wide variety of mounting locations. For optimum results contact your Authorized Sonance Dealer for advice.

### TL623R, TL622R, TL621R

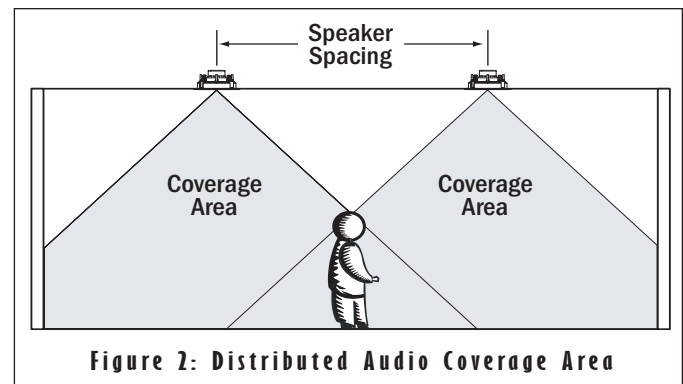
When selecting mounting locations for your speakers you should consider such things as your primary listening location, the primary use for the speakers (distributed audio, 2-channel stereo or home theater) and aesthetic values. Your local authorized Sonance dealer is an expert in audio/video system planning and installation. We strongly recommend that you work with your dealer to ensure that your system is properly planned, assembled and installed.

### Distributed Audio Speaker Placement (Mono signal)

All Sonance ThinLine speaker models have very smooth and predictable off-axis response, so they provide excellent coverage in distributed audio systems from a wide variety of installation locations. The chart in *Figure 1* shows how far apart the speakers can be placed at different ceiling heights while still providing good coverage (as shown in *Figure 2*). The distances are based on ear heights of 62" for standing listeners and 40" for seated listeners.

<b>Speaker Spacing (in feet) for a Distributed Audio System</b>		
	<b>Standing Listener</b>	<b>Seated Listener</b>
<b>8-foot ceiling</b>	5.7'	9.5'
<b>10-foot ceiling</b>	9.7'	13.5'
<b>12-foot ceiling</b>	13.7'	17.5'
<b>14-foot ceiling</b>	17.7'	21.5'

**Figure 1: Distributed Audio Speaker Spacing**



## Home Theater Speaker Placement

### Left, Center & Right Channels

- Place the left, center and right speakers from 1 foot to 2 feet in front of the video screen, anywhere from 6 feet to 10 feet apart, with the center channel speaker as close to midway between the left and right speakers as possible.
- The left & right speakers should be at least 2 feet away from the side walls.
- The main listening position should be between 4 and 10 feet away from the speakers.
- In some cases pivoting the woofer of each speaker towards the listening position will help maximize the soundstage, especially when listening to stereo music sources.

Use *Figure 3* as a guide.

### Left & Right Surround Channels (5.1-Channel System)

Locate the left and right surround speakers on the ceiling between 2 feet and 6 feet behind the listening position. The speakers should be between 6 feet and 10 feet apart. Since the surround speakers are usually called-upon to create diffuse effects like the sound of wind or rain you can mount them close to walls without adversely affecting sound quality.

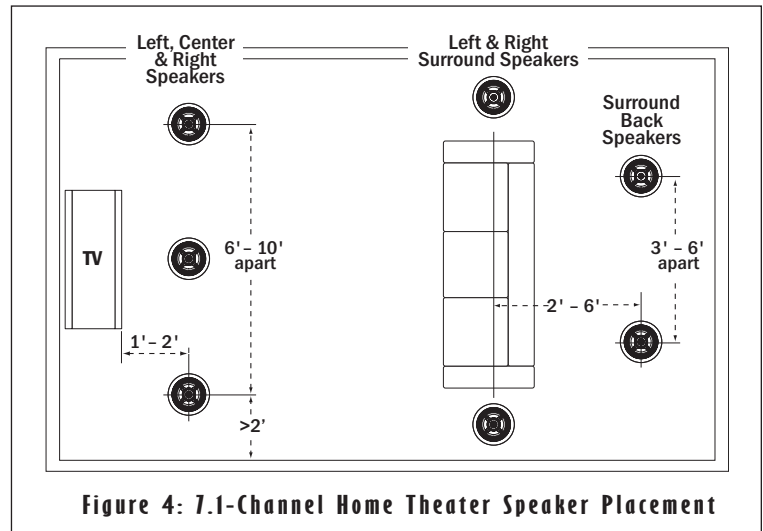
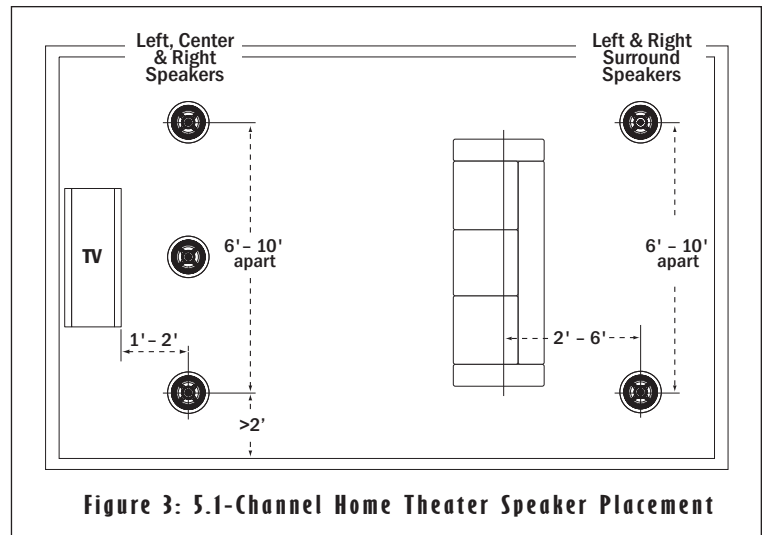
- You can create a more diffuse, spacious surround effect by pivoting the tweeters towards a wall or window, away from the listeners.

Use *Figure 3* as a guide.

### Left & Right Surround and Surround Back Channels (7.1-Channel System)

- **Left & Right Surround Speakers:** Place the left and right surround speakers directly to the sides of the listening position, between 6 feet and 10 feet apart. The speakers can be placed close to the side walls.
- **Surround Back Speakers:** Place the surround back speakers between 2 feet and 6 feet behind the listening position. The surround back speakers should be closer together than the left and right surround speakers — between 3 feet and 6 feet apart. Like the left and right surround speakers, the surround back speakers can be located close to walls without adversely affecting sound quality.
- You can create a more diffuse, spacious surround effect by pivoting the tweeters towards a wall or window, away from the listeners.

Use *Figure 4* as a guide.



## Stereo (2-Channel)

- Place the left and right speakers anywhere from 6 feet to 10 feet apart, with the main listening position as close to midway between the speakers as possible.
- The speakers should be at least 2 feet away from the side walls.
- The main listening position should be between 4 and 10 feet away from the speakers.
- In most cases pivoting the tweeter of each speaker directly towards the main listening position will help maximize the stereo soundstage.

Use the left and right speaker placement in *Figures 3 and 4* as a guide.

## SELECTING THE PROPER SPEAKER WIRE

For the best sound we recommend that you use premium Sonance MediaLinQ® speaker cable, which also complies with UL fire rating codes. You may also experiment with audiophile brands of speaker cable and interconnects, but be sure to check local codes governing wire that may be installed within walls or ceilings. Different brands of wire can have different sonic characteristics, and some may be more compatible with the sonic “signature” of your various audio system components.

For the best sound you should never use thin-gauge speaker wire — it will constrict the sound and diminish bass response. Extra resistance in the speaker wire can make a speaker sound less dynamic and reduce definition of the bass frequencies. In extreme cases, it can even attenuate high frequencies. Also, amplifier power is wasted in thin wire with extra resistance, reducing your system’s maximum output level. To prevent degrading sound quality, the total wire resistance should be less than 10% of the speaker’s impedance. This means that for an 8-ohm speaker, the total resistance of the wire should be less than 0.8 ohms. Refer to *Figure 5* when selecting the proper wire gauge for your system.

Wire resistance in Ohms vs. length of cable run						
Distance in Feet	50'	100'	150'	200'	250'	300'
<b>20 gauge</b>	1.04	2.07	3.11	4.14	5.18	6.22
<b>18 gauge</b>	.65	1.30	1.96	2.61	3.26	3.91
<b>16 gauge</b>	.41	.82	1.22	1.63	2.04	2.45
<b>14 gauge</b>	.26	.52	.77	1.03	1.29	1.55
<b>12 gauge</b>	.16	.32	.49	.65	.81	.97
<b>10 gauge</b>	.10	.20	.31	.41	.51	.61

**Figure 5: Speaker Wire Resistance Table**

## PREPARING THE INSTALLATION LOCATION

### Building a Back Box into the Ceiling Bay

Sonance ThinLine speakers are designed to provide exceptionally musical performance in a wide variety of enclosure volumes. You can get the very best performance from your speakers by partitioning a section of the ceiling bay to form a sealed back box with a specific internal volume. Building such an enclosure will create a dramatic improvement in your speakers’ bass performance and power handling.

#### Ideal back box volume requirements:

ThinLine TL623R:	1.5 ft <sup>3</sup>	ThinLine TL621R:	1.0 ft <sup>3</sup>
ThinLine TL622R:	1.2 ft <sup>3</sup>	ThinLine TL623SSTR:	1.5 ft <sup>3</sup>

## Insulating the Ceiling Cavity

You can also reduce sound transmission to adjacent rooms and improve speaker performance by inserting a sheet of unfaced fiberglass insulation over the back of the speaker. To reduce mechanical noise produced by unsupported drywall, install fiberglass insulation in the ceiling bays adjacent to the speaker location.

### Sonafill®

Sonafill (part #91928) is a retrofittable acoustical treatment system consisting of two pillows and four tiles that virtually eliminates noises produced by resonating drywall. The tiles have pressure-sensitive adhesive and are installed on the back of the drywall on either side of the speaker between the ceiling joists; the pillows are then stuffed in place behind the tiles. The system dramatically improves midbass sound quality and reduces sound transmission into adjacent rooms.

## INSTALLING THE SPEAKERS

### Before Installation: New Construction

For installations in new construction, Sonance recommends using a Symphony FlexBracket (part #92337) to reserve a location for the speaker. The FlexBracket has perforated wings that can be positioned at any angle around the bracket, and is nailed or screwed to the studs. This serves as a guide for the drywaller so that the speaker hole will be in the desired location once the drywall is installed.

### Before Installation: Retrofit

1. Determine the location for the speaker (see *Speaker Placement* on page 4).
2. Perform an obstruction survey to be certain that there are no studs, conduit, pipes, heating ducts or air returns in the ceiling cavity that will interfere with the speaker.
3. The cutout for all ThinLine speakers is  $8\frac{5}{32}$ " (207mm). There also must be at least  $3\frac{1}{32}$ " (77mm) depth within the ceiling cavity.
4. Position the included cutout template where the speaker is to be located and pencil an outline on the ceiling.
  - If you are unsure about obstructions, drill a small hole in the center of the outline and insert a coat hanger wire into the hole to feel-around for possible obstructions.
5. Cut the mounting hole using a drywall saw, and run the speaker wires from the mounting hole to the amplifier location.
  - Consult local building codes before running speaker wires through walls.

## Installation

Sonance ThinLine speakers feature exclusive FastMount® tabs and an integral RotoLock® mounting system for quick mounting directly into existing ceilings and walls.

**WARNING: The edges of FastMount tabs are very sharp. Use caution when handling the speaker.**

1. Remove the paint plug from the speaker.
2. Run speaker wire from the amplifier location to each speaker.
3. Strip  $\frac{1}{4}$ " –  $\frac{1}{2}$ " of insulation from each speaker lead. Twist the strands or tin the exposed wire with solder to ensure that there are no stray strands.

(Stray strands that touch each other can cause a short-circuit that can damage your amplifier.)

- The speaker's connector posts are spring-loaded. Push the top of each connector post down to open the connector and insert the exposed wires into the holes in the posts. (The TL623SSTR has connectors for both the left and right channels.)

- The speaker's positive post is labeled with a red dot; the negative post is labeled with a black dot. Double-check that you connected amplifier "+" to speaker "+" and amplifier "-" to speaker "-".

- Make sure all the RotoLock clamps are in the full clockwise position so that they are tucked within the mounting hole's border. Insert the speaker into the hole in the ceiling (Figure 6). The RotoLock system can accommodate a maximum ceiling material thickness of 1¼".

- The FastMount tabs will prevent the speaker from falling out of the mounting hole, allowing the installer to let go of the speaker to pick-up tools or other items (Figure 7).

**NOTE: THE FASTMOUNT TABS ARE DESIGNED FOR ONE-TIME USE ONLY. IF THE SPEAKER IS REMOVED FROM THE MOUNTING HOLE THE FASTMOUNT TABS WILL DISCONNECT AND REMAIN INSIDE THE CEILING.**

- Tighten the four screws on the front of the speaker baffle. The RotoLock clamps will automatically rotate into position and begin clamping the speaker (Figure 8).

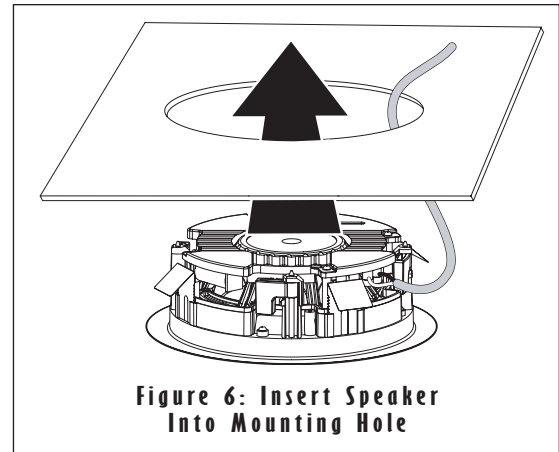
- When you notice resistance on the screws the speaker has been clamped successfully.

**NOTE: THE SPEAKER FLANGE IS DESIGNED TO FLEX AND CONFORM TO ANY SMALL IMPERFECTIONS IN THE CEILING SURFACE. DO NOT TIGHTEN THE SCREWS SO MUCH SO THAT THE FLANGE BOWS-OUT.**

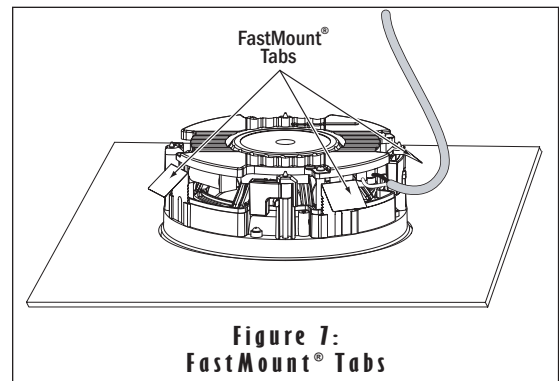
**IMPORTANT: Always use low-torque settings; NEVER over-tighten.**

- Attach the grille after the speaker has been installed. Insert about half of the grille into the groove at the edge of the speaker. Gently fit the remaining half of the grille by working around the speaker, fitting the grille into the groove as you go.

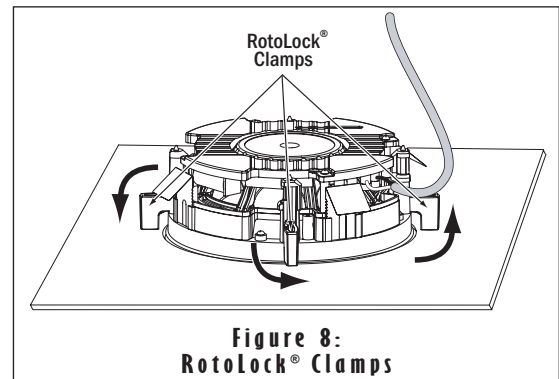
**NOTE: YOU CAN ADJUST THE TORQUE APPLIED TO THE ROTOLOCK SCREWS TO ACHIEVE A PROPER GRILLE FIT.**



**Figure 6: Insert Speaker Into Mounting Hole**



**Figure 7: FastMount® Tabs**



**Figure 8: RotoLock® Clamps**



## PAINTING THE SPEAKERS AND GRILLES

You can paint the speakers and grilles before installing them, which will eliminate the “paint scar” that can be left on the ceiling if the speaker ever needs to be removed for service. You can also paint the speakers after installation, but before the grilles are attached. All Sonance ThinLine speakers come from the factory fitted with a plastic ‘paint plug’ that protects the speaker drivers while the mounting flange is being painted.

Sonance always suggests painting the grille separately from the speaker. Before painting, carefully remove the under-grille cloth. It is held in place with a light tacking glue that makes it easy to remove.

Spray the grilles with thinned paint (5 parts thinner to 1 part paint), being careful not to plug the holes. Too heavy a coat of paint on the grille will adversely affect the sound of the speaker.

Once the grilles and flange are painted and dry, replace the under-grille cloth, remove the paint plug from the mounting flange and install the grille.

## SPEAKER ADJUSTMENTS

### Pivoting Tweeter

ThinLine TL623R and TL622R have a pivoting tweeter. This lets you direct sound toward or away from the listening area, depending on how the speakers are being used:

- If you’re using the speakers in stereo or as the front left/center/right speakers in a home theater, pivot the tweeter directly towards the listening area. This will help the sound from the speakers blend into a solid soundstage even if the speakers are widely separated.
- If you’re using the speakers as surround channel speakers in a home theater, you can create a more diffuse, spacious surround effect by pivoting the tweeters towards a wall or window, away from the listeners.

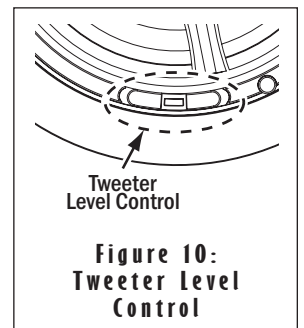
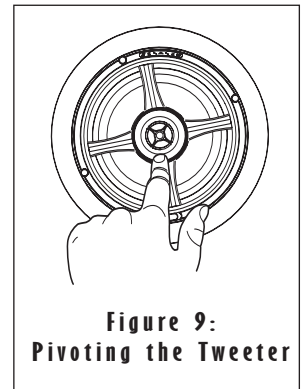
#### To Pivot the Tweeter:

Apply light pressure to the plastic ring around the outside edge of the tweeter dome, as shown in *Figure 9*. Do not touch or apply pressure to the tweeter dome.

### Tweeter Level Control

The ThinLine TL623R and TL623SSTR have a tweeter level control switch (see *Figure 10*) that lets you boost or cut the tweeter’s level by 3dB. This allows you to adjust the speaker’s brightness to better match your listening room or personal taste.

Once you have installed the speakers, listen to a variety of music that you are familiar with. If the music all tends to sound too bright or dull, use the Tweeter Level Control to compensate. If some recordings sound dull and some sound bright the speaker is accurately reproducing differences in the recordings, and you should leave the control in the middle (0dB) position.



## SPECIFICATIONS

### TL623R

Tweeter:	1" (25mm) Silk dome, Ferrofluid-cooled, pivoting
Woofer:	6½" (165mm) Carbon fiber cone, rubber surround
Frequency Response:	43Hz — 20kHz ±3dB
Impedance:	8 Ohms nominal; 6 Ohms minimum
Power Handling:	5 watts minimum; 135 Watts maximum
Sensitivity:	90dB SPL (2.83V 1 meter)
Grille Material:	Perforated aluminum
Adjustments:	±3dB Tweeter level
Dimensions (Dia. x Depth):	9¾" (248mm) x 3 1/32" (77mm)
Cutout Diameter:	8 5/32" (207mm)
Shipping Weight:	10 lbs. (4.5kg) Pair

### TL622R

Tweeter:	1" (25mm) Silk dome, Ferrofluid-cooled, pivoting
Woofer:	6½" (165mm) Polypropylene cone, rubber surround
Frequency Response:	45Hz — 20kHz ±3dB
Impedance:	8 Ohms nominal; 6 Ohms minimum
Power Handling:	5 watts minimum; 125 Watts maximum
Sensitivity:	89dB SPL (2.83V 1 meter)
Grille Material:	Perforated aluminum
Adjustments:	None
Dimensions (Dia. x Depth):	9¾" (248mm) x 3 1/32" (77mm)
Cutout Diameter:	8 5/32" (207mm)
Shipping Weight:	10 lbs. (4.5kg) Pair

### TL621R

Tweeter:	¾" (19mm) Silk dome, Ferrofluid-cooled
Woofer:	6½" (165mm) Polypropylene cone, rubber surround
Frequency Response:	50Hz — 20kHz ±3dB
Impedance:	8 Ohms nominal; 6 Ohms minimum
Power Handling:	5 watts minimum; 100 Watts maximum
Sensitivity:	88dB SPL (2.83V 1 meter)
Grille Material:	Perforated aluminum
Adjustments:	None
Dimensions (Dia. x Depth):	9¾" (248mm) x 3 1/32" (77mm)
Cutout Diameter:	8 5/32" (207mm)
Shipping Weight:	9 lbs. (4.1kg) Pair

### TL623SSTR

Tweeter:	Two 1" (25mm) Silk domes, Ferrofluid-cooled
Woofer:	6½" (165mm) Carbon fiber cone, rubber surround, dual voice coil
Frequency Response:	43Hz — 20kHz ±3dB
Impedance:	8 Ohms nominal; 6 Ohms minimum
Power Handling:	5 watts minimum; 135 Watts maximum
Sensitivity:	90dB SPL (2.83V 1 meter)
Grille Material:	Perforated aluminum
Adjustments:	±3dB Tweeter level
Dimensions (Dia. x Depth):	9¾" (248mm) x 3 1/32" (77mm)
Cutout Diameter:	8 5/32" (207mm)
Shipping Weight:	5 lbs. (2.3kg) Each

## TECHNICAL ASSISTANCE AND SERVICE

***If you any have questions about the operation or installation of this product, please call our Technical Assistance Department on any business day at (800) 582-0772 or (949) 492-7777; from 7 a.m. to 5 p.m., PST.***

If your speakers should need repair or service, contact your Sonance Authorized Dealer for help, or use the following procedure:

1. Prior to calling, note the product's model number, serial number, purchase date, and the name and address of the dealer where you purchased the product.
2. Contact our Technical Assistance Department at the above number(s) and describe the problem the unit is experiencing. If applicable, they will issue a Return Authorization Number.

***IMPORTANT: YOU MUST HAVE PRIOR AUTHORIZATION TO RETURN YOUR SPEAKER TO SONANCE!***

3. If you're directed to return the unit to Sonance for repair, pack the unit in its original shipping carton. If needed, you can obtain replacement packaging from us for a small charge. Note: it is best if you place the box into an additional outer "overcarton" before shipment to minimize a chance of theft in shipment. Please include a copy of the original bill of sale inside the package.
4. Contact a package delivery company such as United Parcel Service or Federal Express to arrange prepaid (not collect) shipping. Do not use the U.S. Postal Service.

***IMPORTANT: Freight collect shipments will be refused.***

5. Write the Return Authorization Number on the outside of the shipping carton.

6. Ship the packaged unit to:

QUALITY ASSURANCE DEPARTMENT  
SONANCE  
212 AVENIDA FABRICANTE  
SAN CLEMENTE, CA 92672-7531

## LIMITED LIFETIME WARRANTY COVERAGE (U.S. ONLY)

SONANCE WARRANTS TO THE ORIGINAL RETAIL PURCHASER ONLY THAT THIS SONANCE PRODUCT WILL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP, PROVIDED THE SPEAKER WAS PURCHASED FROM A SONANCE AUTHORIZED DEALER.

Defective products must be shipped, together with proof of purchase, prepaid insured to the Authorized Sonance Dealer from whom they were purchased, or to the Sonance factory at the address listed on this instruction manual. Freight collect shipments will be refused. It is preferable to ship this product in the original shipping container to lessen the chance of transit damage. In any case, the risk or loss or damage in transit is to be borne by the purchaser. If upon examination at the factory or Authorized Sonance Dealer it is determined that the unit was defective in materials or workmanship at any time during this warranty period, Sonance or the Authorized Sonance Dealer will, at its option, repair or replace this product at no additional charge, except as set forth below. If this model is no longer available and can not be repaired effectively, Sonance, at its sole option, may replace the unit with a current model of equal or greater value. In some cases where a new model is substituted, a modification to the mounting surface may be required. If mounting surface modification is required, Sonance assumes no responsibility or liability for such modification. All replaced parts and product become the property of Sonance. Products replaced or repaired under this warranty will be returned to the original retail purchaser, within a reasonable time, freight prepaid.

This Warranty does not include service or parts to repair damage caused by accident, disaster, misuse, abuse, negligence, inadequate packing or shipping procedures, commercial use, voltage inputs in excess of the rated maximum of the unit, or service, repair or modification of the product which has not been authorized or approved by Sonance. This Warranty also excludes normal cosmetic deterioration caused by environmental conditions. This Warranty will be void if the Serial Number on the product has been removed, tampered-with or defaced. This Warranty is in lieu of all other expressed warranties. If the product is defective in materials or workmanship as warranted above, the purchaser's sole remedy shall be repair or replacement as provided above. In no event will Sonance be liable for any incidental or consequential damages arising out of the use or inability to use the product, even if Sonance or an Authorized Sonance Dealer has been advised of the possibility of such damages, or for any claim by any other party.

Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply. All implied warranties on the product are limited to the duration of this expressed Warranty. Some states do not allow limitation on the length of an implied warranty. If the original retail purchaser resides in such a state, this limitation does not apply.

## EXCLUSIONS AND LIMITATIONS

The warranty set forth above is in lieu of all other warranties, express or implied, of merchantability, fitness for a particular purpose, or otherwise. The warranty is limited to Sonance products registered herein and specifically excludes any damage to loudspeakers and other allied or associated equipment which may result for any reason from use with this product. Sonance shall, in no event, be liable for incidental or consequential damages arising from any breach of this warranty or otherwise. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

SONANCE THINLINE™ TL and SSTR

## SYSTEM NOTES:

## SYSTEM NOTES:





©2006 Sonance. All rights reserved. Sonance, Sonance ThinLine, RotoLock, Sonafill and FastMount are trademarks or registered trademarks of Dana Innovations.

Due to continuous product improvement, all features and specifications are subject to change without notice. For the latest Sonance product specification information visit our website:  
[www.sonance.com](http://www.sonance.com)

212 Avenida Fabricante • San Clemente, CA 92672-7531 USA • (800) 582-7777 or (949) 492-7777 • FAX: (949) 361-5151 • Technical Support: (800) 582-0772

[www.sonance.com](http://www.sonance.com)